Title **Electrotechnics - circuits theory**	Code **1010334121010320207**
Field **Control and Robotics**	Year / Semester **1 / 2**
Specialty **-**	Course **core**
Hours Lectures: **4** Classes: **24** Laboratory: **2** Projects / seminars: **-**	Number of credits **9**
	Language **polish**

Lecturer:

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Status of the course in the study program:

Obligatory subject, Electrical Engineering Faculty, Field: Control and Robotics, Full time undergraduate studies / Extramural undergraduate Studies.

Assumptions and objectives of the course:

The students should theoretical and practical problems electrical engineering. She should be able to calculate for constant and sinusoidal currents circuits.

Contents of the course (course description):

Electric current, Gauss?s law, capacitivity, electrical capacitance, energy capacitor, electric potential, voltage, Ohm?s law, electrical resistance of a wire, temperature coefficient of resistance. Current and voltage law, methods analysis DC circuit, theorems of Thevenin and Norton, energy and power of electric current, magnetic field, Biot-Savart law, Ampere?s law, Faraday?s law, energy of magnetic field, inductance, mutual inductance. Average, effective (root-mean-square) value for the current and voltage, RLC elements in sinusoidal alternating current circuits, analysis AC circuits, energy and power of AC circuits, resonance in the serial and parallel circuits, networks and filters, correction of load factor, three-phase circuits.

Introductory courses and the required pre-knowledge:

The basic knowledge of electrical science (theory), equation Cramer?a, complex numbers theory.

Courses form and teaching methods:

Lectures, supported by transparencies and slides, computational classes.

Form and terms of complete the course - requirements and assessment methods:

Written examination.

Basic Bibliography:

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Additional Bibliography:

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